



Fall/Winter 2016

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Beyond the SCPE



A publication of the Missouri State Public Health Laboratory

The MSPHL Support System By: Bill Whitmar, Laboratory Director

There's a lot of junk on television except mine. That show is *The Deadliest Catch*. This follows a number of large crab fishing boats while they work in the Bering Sea off the coast of the Aleutian Islands of Alaska, typically in the treacherous fall and winter season. Their job has been called the most dangerous in the world. While it may seem they work in isolation as a single boat for weeks at a time, in actuality they are in contact with any number of other boats, have a crab quota to meet as set by federal entities, deliver to large processing companies and rely on the Coast Guard when a medical emergency or a disaster strikes. In other words, there are a number of parts to this story.



Bill Whitmar, MSPHL Laboratory Director

While on the boat the captain relies on very coordinated teamwork of his crew to load and drop off the crab "pots", or traps, pick them up again later, keep the boat maintained, and the crew maintained as well. The message is that no one person or boat is on an island, there are those around to help.

"Like those crab boats roaming the frothy Bering Sea, public health laboratories have a support system as well."

Why do I mention this? Around the U.S., its territories and selected other countries there are public health laboratories that operate independently- accepting samples, testing them and sending out reports. They maintain their buildings to ensure essential air handling and other critical infrastructure systems are working. Their staff are carefully trained and periodically re-trained.

Laboratory equipment is purchased, installed and then maintained as well. New assays, or tests, are investigated and implemented. Audits and inspections occur. Laboratories are busy places.

Does all of this activity within the laboratory occur in isolation though? Not entirely. Like those crab boats roaming the frothy Bering Sea public health laboratories have a support system as well. We can count on other laboratories for advice and assistance for example. However, our most important partner is the Association for Public Health Laboratories, or APHL. This organization is our

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advocate on the national and international front for all matters related to public health laboratories. APHL ensures that labs are prominently represented at the federal legislative level, at CDC and at the White House. They advocate for us legislatively, for federal funding and for the public to recognize our capabilities and capacities in general.

Operationally, laboratories realize APHL benefits by receiving staff training throughout the country, webinars, and participation on teleconferences with CDC and APHL specialists. In addition, many of our own staff are participants on various APHL committees which then influence public policy. Partnership with APHL has certainly strengthened us.

APHL has throughout its existence benefited all public health laboratories, public health and the citizenry by focusing on public health policy and building laboratory capabilities. If you haven't done so yet, visit them at www.aphl.org.



The 2016 Newborn Screening and Genetic Testing Symposium was held in St. Louis, Mo. Several members of the MSPHL attended and assisting in planning the meeting. MSPHL also hosted a laboratory tour of its facility during the conference. Picture courtesy of APHL

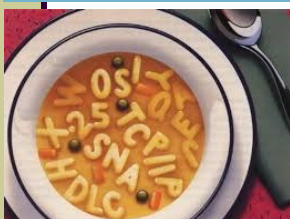
Bill

Acronyms



AFB - Acid Fast Bacillus
 APHL – Association of Public Health Laboratories
 CDC – Center for Disease Control and Prevention
 CSF—Cerebral Spinal Fluid
 CLIA – Clinical Laboratory Improvement Amendments
 COOP – Continuity of Operations Program
 DCPH—Division of community and public health
 DHSS – Department of Health and Senior Services
 DNR – Department of Natural Resources
 DPS – Department of Public Safety
 DRL –Division of regulation and licensure
 EB – Environmental Bacteriology Unit
 EiMF – Excellence in Missouri Foundation
 ELC—Epidemiology and Laboratory Capacity grant
 EMAC—Emergency Management Assistance Compact
 EOM—Emergency Operations Manual
 FBI—Federal Bureau of Investigation
 FDA—Food and Drug Administration
 ITSD—Information Technology Services Division
 LIS—Laboratory Information System
 LPES – Laboratory Preparedness, Education and Safety
 LRN – Laboratory Response Network
 LSD—Lysosome Storage Disorder

MGIT—Mycobacteria Growth Indicator Tube
 MOLRN—Missouri Laboratory Response Network
 MSDS—Material Safety Data Sheets
 MSPHL – Missouri State Public Health Laboratory
 NBS—Newborn Screening
 P-card—purchasing card
 PART – Post analytical reporting team
 PCR – Polymerase Chain Reaction
 PHEP – Public Health Emergency Preparedness
 PPE—Personal Protection Equipment
 QI—Quality Improvement
 rRT-PCR – Real time, reverse transcription polymerase chain reaction
 SARS—Severe Acute Respiratory Syndrome
 SDS—Safety Data Sheet
 S.C.O.P.E. – Systematically Collaborating for Overall Performance Excellence
 SPHL – State Public Health Laboratory
 TB—Tuberculosis
 TRF—Time Resolved Fluorescence
 USDA—United States Department of Agriculture
 USPS – United States Postal Service
 WHO – World Health Organization



MSPHL Tuberculosis Unit Receives Director's Award for Team Quality Improvement

By: Laura Naught, CLIA Director

Congratulations to the Statewide Partnership for TB Elimination Team!

They received the Director's Award for Team Quality Improvement for the 2nd Quarter.

Tuberculosis is one of the world's deadliest diseases affecting one third of the world's population infected with TB. Although trends in the number of new TB cases in the United States are declining, TB Elimination efforts are challenged with drug resistant TB. Over a 5-year period the Laboratory received on average 34% of samples within 24 hours after collection for TB testing. In 2014, the CDC announced new national standards with a targeted goal of receiving greater than 67% of specimens within 24 hours after collection. This standard is important because the reliability of a laboratory result is directly related to the quality of the sample and rapid delivery to the laboratory. Additionally, rapid delivery of clinical samples aids effective TB control interventions by reporting more accurate results to quickly diagnose cases with active TB disease.

The TB Elimination team used several different approaches to improving sample submission turnaround times. Several letters were sent to submitters explaining the importance of the rule changes and expectations as well as providing submitters with a report card of their progress. This report card provided submitters with information regarding how many specimens they were submitting and the transit time it took for the laboratory receive them. This proved to be a great visual tool to assist in improved transit times.

In the first quarter of 2016, the Missouri State Public Health Laboratory (MSPHL) received 54% of clinical specimens for TB testing within 24 hours from collection. This is a 21% increase since the start of this project where only 34% of specimens were received within 24 hours. The evolution of the initiative allowed the MSPHL to effectively identify 120 new TB disease cases of which 24 were rapidly identified within 24 hours from when the sample was collected. MSPHL confirmed that three of these cases were classified as MDR-TB so the treatment regimen was immediately customized to the patient. Rapidly identifying these new MDR-TB cases averted the scenario of creating other cases of MDR-TB by these individuals had they not been identified.

The QI efforts could not have been accomplished without the assistance from all MSPHL customers. Patients were immediately treated for active TB disease with laboratory confirmation using rapid methods such as nucleic acid amplification testing. Further spread of TB in Missouri communities was interrupted by treating recently infected contacts that benefit greatly from latent TB infection treatment to avert progression to active TB disease.

Active communication and follow up has been the cornerstone to the success of this project. The next step is to maintain these activities. The MSPHL must remain vigilant to identify opportunities for improvement throughout this process. The team was honored with a reception on September 28th.



*From L to Right: Roy Tu'ua, Teresa Wortmann, Alan Jerrell, Traci Hadley, DHSS Director Peter Lyskowski and Matthew Barry.
Picture courtesy of Lori Buchanan, DHSS.*

MSPHL Celebrates Lab Week



The MSPHL celebrated Laboratory Week September 12th – 16th and fun times were had by all. The laboratory hosted several state legislators for a tour, the staff played 'Lab'opoly, enjoyed some BBQ provided by laboratory management and enjoyed playing intercom bingo and participating in a human scavenger hunt. The MSPHL values its employees and thanks them for striving towards promoting, protecting and partnering for health by delivering quality public health laboratory services.

MSPHL Hosts Full Scale Exercise

By: Russ Drury, LPES Director and Amy Pierce, Training Coordinator

“You die now. Are you afraid? Death to America.” These words alone are enough to send chills down the spine. Paired with an envelope containing a mysterious white powder, the fear would be overwhelming. What do you do? Who do you call? How do you protect others? Having response plans in place and testing those plans is essential.

The MSPHL has traditionally been responsible for testing these powders within the State looking for agents of bioterrorism such as those that cause Anthrax, Plague and Smallpox. The MSPHL also has intricate plans in place to respond to a white powder or any other biological or chemical incident that may take place within the confines of the laboratory.

On September 22nd, the MSPHL hosted a full scale exercise partnering with the Federal Bureau of Investigation (FBI), 7th Civil Support Team, Cole County Emergency Response Team, Cole County Hazmat, Jefferson City Fire Department, Capitol Police, Cole County Emergency Medical Service and the Department of Mental Health based on the discovery of a white powder, threatening letter in the main office area. Working with external responders was key to the success of the exercise and extremely important for building communication and trust. The Laboratory Preparedness, Education and Safety (LPES) Unit coordinated the months of planning for this exercise based.

The main purpose of the exercise was to test the effectiveness of the Laboratory Emergency Operations Manual (EOM). This manual includes detailed procedures for relocating staff to shelter areas within the building, communication plans with both employees in the laboratory and responders outside, and staff evacuation plans. The LPES Unit was challenged with developing an exercise to test the manual itself, but also the staff's understanding and application of the manual. The white powder scenario was a logical choice due to its inclusion of multiple external emergency response partners. Inclusion of these partners resulted in a robust exercise giving MSPHL staff the opportunity to both participate in the internal response as well as witness the response from emergency responders first hand. The exercise was also used to provide external partners familiarity of the laboratory, build relationships with laboratory leadership and gain awareness of the MSPHL response plans. The exercise took six months to plan and involved multiple meetings, large amounts of communication and a table-top exercise prior to execution.

The MSPHL utilized seven observers to evaluate and record the events of the exercise. Each was trained in advance, made aware of expectations, and provided evaluation forms that included staff expectations ranging from physical actions to communications. Observers were able to document when messages were received or sent, when actions were completed and any unexpected events, questions, comments or concerns. Once completed, these forms were submitted to the LPES Unit for review to assist with identifying gaps and making updates to the EOM.



Members of the Federal Bureau of Investigation and 7th Civil Support Team work together to collect samples.

...Exercise Continued

Due to the nature of the exercise the MSPHL response, specifically the evacuation, was heavily reliant on guidance from outside partners who have specific plans in place for building evacuations. The unified command had open lines of communication with each of the responding agencies, as well as laboratory leadership. Laboratory staff took shelter in safe zones that are clearly defined in the EOM and remained in those areas until they received proper guidance from the unified command. During the shelter time the Cole County Hazmat team, in coordination with the FBI and Jefferson City Fire Department, assembled their decontamination tents at the front of the laboratory to simulate a true building evacuation. All laboratory staff were given the opportunity to pass through the decontamination tents and instructed inside the tent what their expectations would be in a real event. Members of the Department of Mental Health were also staged at the entrance to the tent as well as the exit, to assist staff that may be incurring any mental stress.



Cole County Hazmat Team prepares to run MSPHL staff through decon.

The exercise effectively tested the response of the MSPHL to this type of incident. The procedures within the EOM seemed genuinely effective in getting staff out of harm's way through quick actions and collaboration with those outside entities who were there to assist. That is not to say, however, that there are not lessons to be learned. Communication was generally successful. Updates to staff were given on a regular basis and all staff were directed to safety.



MSPHL staff receive instructions before passing through the decontamination tents.

However, many employees felt they were not given enough information about the situation. Others did not understand some of the logic behind the procedures within the EOM. This leaves an opportunity for more training on EOM protocols and an emphasis on keeping staff apprised of the situation as it unfolds. Gaps in understanding the role and complications of social media were recognized, as well as the challenges to maintaining an organized response if staff (understandable in such a high stress situation) decide not to follow directives or try to leave the building without permission. All of these must and will be addressed both in the EOM and with staff. As with any exercise, this drill will lead to a better manual and more

employee engagement in the steps the MSPHL would take in an emergency.

A very large "Thank You!" to all who took part in pulling off this exercise. From planning, to evaluating to responding, to even playing the part of the first to discover the contaminated letter, this exercise would not have been as successful as it was without the collaboration of all those involved. Thank you to the MSPHL staff who took this drill seriously and provided invaluable feedback. The Emergency Operations Manual and the Missouri State Public Health Laboratory will be better for it!

MSPHL Host Site for Governor's Safer, Stronger Missouri Week

On October 24th, 2016 the Missouri State Public Health Laboratory hosted a roundtable discussion on advances to Missouri's public health response capabilities as part of *Safer, Stronger Missouri Week*.

Roundtable participants included: Peter Lyskowski, director of the Missouri Department of Health and Senior Services; Lane Roberts, director of the Missouri Department of Public Safety; Ron Walker, Director of the State Emergency Management Agency; Bill Whitmar, Director of Missouri State Public Health Laboratory; Harold Kirbey, Director of DHSS Division of Community and Public Health; Stephanie Browning, Director of Columbia/Boone County Public Health and Human Services; Becky Hunt, Director of the Madison County Health Department; Russ Conroy, Director of Emergency Preparedness and Safety, Mercy Hospital-Springfield; Jeff Hamilton, regional manager of Emergency Management, Mercy Health System; Debbie Mays, Director of Safety and Emergency Preparedness, BJC Healthcare; and Matthew Soule, Director of Safety/Emergency Preparedness, Children's Mercy Hospital.



From L to R; Lane Roberts, director of the Missouri Department of Public Safety; Ron Walker, director of the State Emergency Management Agency, Governor Jay Nixon and DHSS Director Peter Lyskowski. Picture courtesy of Lori Buchanan, DHSS.



From L to R at table; Governor Jay Nixon, DHSS Director Peter Lyskowski, MSPHL Director Bill Whitmar, Stephanie Browning, director of Columbia/Boone County Public Health and Human Services and Becky Hunt, director of the Madison County Health Department. Picture courtesy of Lori Buchanan, DHSS.

"I commend all those who have worked to make Missouri safer and stronger by advancing our state's disaster response and recovery capabilities," Gov. Nixon said. "Through strong coordination and tremendous faith-based and volunteer partners, Missouri has built a response and recovery system that has been called a model for other states, but I'm interested in continuing to advance our abilities."

See the full press release at <https://governor.mo.gov/news/archive/gov-nixon-participates-roundtable-discussion-advances-missouri%E2%80%99s-public-health-response>.

APHL: A-OK in N.M.

By: Mike Massman, Deputy Director

The Association of Public Health Laboratories (APHL) is a national organization that is composed of agency representatives and state and local government laboratories that include public health, environmental, agriculture, and food safety laboratories. This diverse group of disciplines collaborates through association to strengthen global laboratory and public health systems to produce quality, viable, and comprehensive laboratory services.

The Missouri State Public Health Laboratory (MSPHL) is an active member that is intertwined within the organization and benefits greatly from this Association. Numerous programs are utilized and supported by the MSPHL each year through APHL sponsored activities. The MSPHL relies on this bi-directional interaction to help build and grow staff, policy, practices, partnerships, technologies and laboratories.

The APHL is currently organized into 14 central areas (committees)(Figure 1) to facilitate relevant interaction in upholding the core functions of a public health laboratory.

Figure 1. APHL Committees

- **Biosafety and Biosecurity**
- **Environmental Health**
- **Environmental Laboratory Science**
- **Finance**
- **Food Safety**
- **Global Health**
- **Infectious Diseases**
- **Informatics**
- **Knowledge Management**
- **Laboratory Systems and Standards**
- **Local Laboratory**
- **Public Health Preparedness and Response**
- **Newborn Screening & Genetics in Public Health**
- **Workforce Development**

The MSPHL maintains various staff members that are involved in the organization in varying capacities or reside on specific APHL committees. They work to support the business of the committees by offering expertise and experiences in special areas of interest or benefit. The work produced by these groups helps to provide laboratory information to internal and external stakeholders worldwide.

In one such example, Dr. Laura Naught, MSPHL's CLIA Director, provides direct and ongoing coaching to a fellow Quality Assurance Officer in a public health laboratory located in Uganda.

In another, MSPHL Microbiology Unit Manager, Steve Gladbach, helped to provide guidance and information in regards to food safety which led to the publication: *Isolation and Characterization of Shiga toxin-producing Escherichia coli (STEC) from Clinical Specimens.*

Likewise MSPHL Chemist, Brianna Medrano, recently was supported in full by an APHL travel scholarship to attend Nerve Agent Metabolite training at CDC laboratories in Atlanta. Patrick Hopkins of the Newborn Screening Unit resides on the Newborn Screening Committee and also helped plan the APHL Annual Newborn Screening Conference. Still other MSPHL laboratorians

have been selected and continue to participate in the distinguished Emerging Leader Cohort. Opportunities like these exist through laboratorians participating to produce a benefit for all.

Each year the APHL organization and members convene at an annual meeting to interact and learn about constant and new/emerging issues affecting public health-related laboratories. The 2016 APHL Annual Meeting was held in Albuquerque, New Mexico. The MSPHL was represented at this meeting by several laboratorians because of committees or applicable training, interest, or information that was provided at this specific meeting. This year's APHL Annual Meeting was especially important for the MSPHL because Dr. Laura Naught was awarded the 2016 APHL Emerging Leader Award. This award honors an individual whose leadership has been instrumental in advancing laboratory science, practice, management, policy, or education and through this effort has set standards that can be used as models or best practices for other laboratories.

Dr. Naught was presented the award in front of several hundred fellow laboratorians at the Awards Breakfast Presentation during the meeting. Dr. Naught was able to provide comments of appreciation for MSPHL staff for helping make her award possible. More information about her and this award is located at: <https://www.aphl.org/membership/awards/Pages/Emerging-Leader-Award.aspx>



Dr. Laura Naught after receiving 2016 APHL Emerging Leader Award. Image courtesy of APHL.



MSPHL 2016 APHL Annual Meeting attendees at the top of Sandia Peak, Albuquerque, New Mexico. L to R: Roy Tuua, Mike Massman, Shondra Johnson, Amy Pierce, Steve Gladbach, Laura Naught, Russ Drury and Jessica Bauer.

Other MSPHL attendees took part in networking with friends and colleagues, attending trainings, and informative sessions in areas such as; informatics, gene sequencing, food safety, and preparedness. MSPHL staff continued interactions with friends after daily meetings. In one evening excursion, MSPHL staff ventured to the top of nearby Sandia Peak in a tramway to dine in a mountain-top restaurant at an elevation of 10,378 feet. Some would have appreciated a bit of "peak shaving" before the top was reached.

APHL members have been cooperating together in an organized fashion for over 50 years. The Association offers a haven for laboratory colleagues to scientifically engage to find practical solutions to make the science of public health laboratories better for tomorrow. The 2016 APHL Meeting was a tremendous success and another fabulous

opportunity for our staff and institution...especially the enjoyment of Dr. Laura Naught receiving the 2016 APHL Emerging Leader Award.

Emerging Leader Experience

By: Russ Drury, LPES Director & Roy Tu'ua, TB Unit Chief

Have you ever been rowing? That's where everyone on a long boat has a pair of oars to manually propel across water by working in unison to the beat of banging drums and whips cracking across your backs (exaggeration), but with a coxswain (instead of drums and whips) and a lot more finesse and grace. The APHL uses the practicality of rowing as the program design for the Emerging Leaders Program (ELP). The APHL ELP is a 12-month leadership development program designed for public health laboratory professionals participating in skill development workshops, networking opportunities, leadership exercises and project development. The ELP program puts

together a cohort of public health laboratory professionals nominated by their Laboratory Directors from all walks of life throughout the country. The purpose of the program is to cultivate leadership skills by bringing each individual out of their comfort zone and preparing them for future managerial and supervisory positions. The Missouri State Public Health Laboratory (MSPHL) has been an active participant in the ELP program, sending a representative through cohorts one (Bill Whitmar, Director), two (Laura Naught, CLIA Director), six (Russ Drury, LPES Director) and eight (Roy Tu'ua, TB Unit Chief).

The first challenge of the program is team building exercise with team rowing. Through the rowing program, you quickly learn the importance of each role on the boat. You learn to trust your teammates and that properly doing your part is integral to the success of the group. Just one person not doing their part impacts the team's progression across the lake. Examining the rowing analogy on a macro level the lessons learned hold true in terms of teamwork within individual laboratories, units, the MSPHL and on to partnerships within the State of Missouri and United States. Much like each individual rower, every member of public health plays an important role in the big picture of protecting the public. All partners work together to "move the boat."



Roy Tu'ua, Far Left, with members of his cohort.



Russ Drury, second from right, is learning to row with his CLP cohort class.
Photo courtesy of APHL.

The cohort builds on that initial training and works as a team to develop and complete a project over the course of the year. These projects must be relevant to public health laboratories, must be sustainable and must have a measurable outcome. The projects have ranged from the development of the www.thatssick.org website used as a recruitment tool for public health laboratories to Laboratory Competency Analysis Tool (LCAT). The experience of developing these projects often gets the participants outside their comfort zone while focusing on teamwork, maximizing resources, networking and developing leadership and critical thinking skills. ELP participants also participate in trainings on conducting productive meetings, Coaching, communication skills and storytelling.

Not New to Newborn A Spotlight on Patrick Hopkins

By: Mike Massman, Deputy Director

Patrick Hopkins is the Laboratory Manager of the Newborn Screening Unit at MSPHL. Patrick is currently the senior staff member in the entire MSPHL with over 33 years of service at the laboratory and over 26 years within the Newborn Screening Unit.

Patrick was born and raised in Keokuk, Iowa. He graduated from the University of Iowa with a degree in Microbiology and immediately began his career at the MSPHL in the Microbiology Unit in August 1983. In 1990, he transferred to the Newborn Screening Unit as a Senior Scientist and became a Laboratory Manager in 2006, and the Unit Manager in 2009. During his career, Patrick has been an integral part in the evolution of newborn screening in Missouri and the world. His career at the MSPHL has spanned the testing for two disorders to now over 72. He maintains a staff of 16 scientists working six days per week utilizing complex technologies such as tandem mass spectrometry and microfluidics to produce critical life-saving results.



Patrick Hopkins, Newborn Screening
Unit Manager

Patrick is recognized as an international expert in the area of newborn screening. He has served on numerous national committees through APHL, the Heartland Collaborative, and CLSI. He has traveled the world to present laboratory aspects of newborn screening; recently in places such as Mexico and the Netherlands. Patrick also provides ongoing research support through having acted as a co-investigator in a five year project to form a reliable laboratory newborn screening contingency plan for Midwestern states. This effort produced a viable plan to maintain newborn screening through the execution of an EMAC with actual testing of newborn screening samples by partnering states. In one exercise the Arkansas Civil Air Patrol successfully delivered Arkansas newborn screening samples to Jefferson City for testing at the MSPHL. Patrick also contributes to international newborn screening research and improvement through his work with the Region 4 Collaborative Data Project to make data quality comparisons and improvements in newborn screening testing programs.

In 2014, Patrick led the effort at the MSPHL to implement a new technology to screen for Lysosomal Storage Disorders (LSD) in Missouri. In this effort, the MSPHL became the first laboratory in the world to conduct full population screening for several LSDs. This ultimately led to a publication in *The Journal of Pediatrics*, a new pending FDA cleared test, a new option for other states or countries to utilize for LSD newborn screening testing, and almost certainly was helpful in the addition of new disorders to the national recommended panel of newborn screening testing. After 34 years of service Patrick plans to retire from the MSPHL and pass the torch to a well-trained and competent staff in the spring of 2017. He is deservedly ready to spend more time with his family of six children, their spouses, and his own growing population of newborn grandchildren. He will undoubtedly also have more time to spend walking with his wife, gardening, cooking and his church

choir. Patrick Hopkins has certainly found his niche as an acclaimed expert in public health by making the most of his career and opportunities at the MSPHL through hard work, perseverance, and dedication. It is safe to say that Patrick Hopkins has played a role in helping to bring countless newborns around the world into a healthier life. Patrick is indeed a prime example of a role model for MSPHL laboratorians and the epitome of being passionate and compassionate about promoting, protecting, and partnering for health by delivering quality public health laboratory services.



Patrick with his children and grandchildren

My APHL Coaching Experience By: Laura Naught, CLIA Director

Some may think that trying to schedule a phone call 8,000 miles away should be relatively easy with technology today, but it is harder than one may think. That is where I have found myself over the past several months with my coaching experience through APHL. Earlier this year the Association of Public Health Laboratories launched their Global Health Emerging Leader Program in Uganda. This is the second year of this program that provides first-hand experiences to help medical laboratory managers, supervisors and directors with skills and opportunities to better understand how to improve and enhance their leadership and management skills.

As coaches we attended several webinars and teleconferences where we learned about coaching and discussed challenges. I was paired with Patricia Akello who works for the Central Public Health Laboratories, East Africa Public Health Laboratory Network Project in Kampala, Uganda. We hit it off on our first call, and we could tell right away we were very similar in our personalities and work ethic. I knew we would be fast friends. Being half way around the world and trying to have a conversation can be extremely challenging especially due to internet access and availability. Email does work, but its hard to have a conversation. Even having a phone conversation never seems to go smoothly no matter how well we plan. However, we use several outlets to communicate such as Skype and the whatsapp application. While it has been hit and miss on our scheduled calls I have most certainly enjoyed the conversations and hearing the progress of the group's project working on a proficiency testing program. I find so much comfort in knowing that even half way around the world there are people everywhere trying to better the world that we live, and I know Patricia is one of them. I hope one day we will have the opportunity to meet in person.



Imagine courtesy of The World Fact

Firsthand Account by Recent MSPHL Job Shadowing Participant

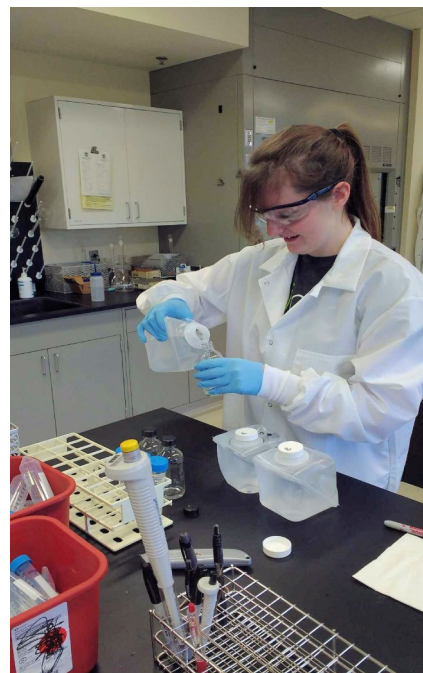
By: Mollie O'Day

I think the question I am most often asked is, "What even got you so interested in science?". The answer is my mother. She wanted to make sure that her daughters had the same opportunities to be scientists and mathematicians as her sons did. At a young age I participated in a program called *Magic of Chemistry* through Girl Scouts at the University of Missouri. After that I spent six years volunteering with the same program and working with young girls in the laboratory. In 2009 I applied, and was selected, to go to the Grand Teton Science School to learn a little more about the environment and the world around us. In 2010 I was selected to go to NASA's Goddard Space Flight Center to learn from leading scientists about the universe that extends past Earth. These experiences were the impetus for my decision to begin a degree program in the field of Chemistry at Truman State University in 2013. While these were wonderful experiences, there was one thing that none of these opportunities had given me - the opportunity to view chemistry use in the real world. Thankfully, I was offered the opportunity to job shadow for the Missouri State Department of Health and Senior Services (MO DHSS).

Shadowing for the MO DHSS was an amazing experience. It made me think about the things scientists have to do on a regular basis that you normally do not think. If you had told me a year ago that I would be blending catfish so that tests could be run on them, I would not have believed you. There were many tasks I observed that are part of a chemist's day. Such as making sure the gas tanks are full, filling out required documentation, and I learned a few things about instrument maintenance that I was unfamiliar with doing. For example, I learned how to clip a column in a GC and replace the syringes. In addition, I learned applications of instruments and how they're used outside of an educational laboratory. Instead of measuring the amount of volatile liquids in a mouthwash in a classroom laboratory, I was seeing how to measure poisons in food. While the measure of volatile liquids can be interesting, it just does not have the same applications. This experience allowed me to see instruments I've never used before. I had never seen an inductively coupled plasma (ICP) mass spectrometer before. This instrument was discussed in classes, but understanding the concepts is much easier when you can experience it as it's being used.

During the summer, I was given the opportunity to shadow the newborn department as well. As a chemistry major, I have never taken a biology course. Shadowing this department allowed me to learn a little more about biological aspects of science. I experienced lab techniques I have never seen before. For example, I had never seen isoelectric focusing before. Seeing the newborn screening tests on the MS was also interesting. Since this department has such a high amount of samples, it is run differently. This provided me with a view of two different lab environments which I will consider when evaluating job opportunities.

Analytical chemistry is the field I hope to go into one day. This experience really made it clear that it was what I want to do and made me more sure of my decision. All of this being said, I guess I noticed one similarity between my summer experience and my undergraduate classes: instruments will always have a mind of their own.



Mollie is learning how to separate out water samples for various analytical tests.

Blood lead testing unit begins using OpenELIS

By: Shondra Johnson, LIMS Administrator and Alan Schaffer, Chemistry Unit Chief

On August 1, 2016, the Blood Lead testing section began using the OpenELIS application for sample tracking from receipt through results reporting. The OpenELIS web portal was also included in this implementation, and we continue to receive requests for access to the web portal from our submitters. Prior to our clinical submitters gaining access to the web portal, a Memorandum of Agreement (MOA) has to be signed by the facility administrator or designee. After the fully executed MOA is received, each user that needs access to the portal also has to complete an attachment to the MOA that includes information specific to the user along with confidentiality statements they are agreeing to when they get access.

As of the end of September, we have approximately 30 web portal users which account for 16 out of 49 facilities that have submitted blood lead samples since August 1st. We continue to contact our facilities to inform them of the availability of the web portal and how they can request access.

Moving to OpenELIS has improved the blood testing process in the Chemistry Unit. Test Request Forms are now fillable forms that are available on our website. The new form is more cost efficient than the carbon copy forms which had to be ordered through State Printing Service. The Quick Entry of samples in OpenELIS when they are received makes it easier to track the samples through the testing process. Access to sample reports by laboratory staff is more convenient. The report can be accessed electronically through the OpenELIS application instead of having to go down three floors in the laboratory to where hard copies of the reports are filed.

Upcoming implementations in OpenELIS include Chemical Terrorism, Chemistry and Environmental Bacteriology Food testing sections.

Seeing Double



Josh (left) and Matt (right) Barry.

Matt and Josh Barry have MSPHL staff seeing double since. To our knowledge they are the first twins to be on staff at the laboratory. Matt is a scientist in the Tuberculosis Unit, and Josh is a scientist in the Molecular Unit. Matt and Josh grew up in California, MO and both attended the University of Missouri Columbia where they each received Bachelor's of Science degrees in Biology. They share a lot of commonalities, but their sense of humor definitely stands out. They are a great addition to the MSPHL staff, and we are lucky to have them on our team.



**Staff
happenings
in the
Laboratory**

Lab Blab

New Employees

Elizabeth Anderson—Newborn Screening; **Polly Burre**—PART, **Heather Cornelison**—Virology; **Gretchen Hagen**—Environmental Bacteriology, **Virginia Kowalewski**—Environmental Bacteriology, **Jeremy Noel**—PART, **Ben Roberts**—Newborn Screening; **Kelsea Scott**—PART and **Michael Singer**—Newborn Screening.

Promotions

Monica Beddo—Molecular, promoted to a Public Health Laboratory Scientist; **Holly Evers**-PART, promoted to a Senior Office Support Assistant, **Leon Luebbering**—Environmental Bacteriology, promoted to Unit Chief, **Ashley Mehmert**—Environmental Bacteriology, promoted to Broadband I assistant manager, **Jessica Meller**—Environmental Bacteriology, promoted to a Senior Public Health Laboratory Scientist, **Matt Sinn**—Molecular promoted to a Public Health Laboratory Scientist

Conferences & Trainings

Josh Featherston, and **Tracy Klug** are part of the 2016-2017 DHSS Next Step Leadership Program

Alan Schaffer attended the LRN-C Level 1 and 2 Meeting in Portland, Maine and the 2016 Missouri Hazardous Waste Seminar in Columbia, MO

Fran Thompson attended the ASMS Conference, San Antonio, Texas

Brianna Medrano attended the OPNA in Urine and Serum at CDC in Atlanta, GA

Mindy Rustemeyer attended the FERN Gamma Spectroscopy-Analysis for Food in Boston, MA

Brian Inman, **Jackie Pfeneger** and **Amy Pierce** attended the Dangerous Goods Symposium, Chicago, IL

Roy Tuua, **Pat Olson**, **Alan Jarrell** and **Matthew Barry** attended the Pipette Training sponsored by Thermo Fisher Scientific on October 19th

Stephen Gladbach attended the ELC grantee meeting in Atlanta, GA

Ashley Steeby attended CDC Intestinal Parasitology workshop in Atlanta, GA

Adam Perkins attended CDC Bloodborne and Tissue Parasitology in Atlanta, GA

Ashley Mehmert attended the FERN CAP National Conference in Richmond, VA and the FERNIAFP Conference in St. Louis, MO

Leon Luebbering attended the Evaluation of Milk Laboratories Southwest Regional Conference in Denver, CO and the Missouri Dairy Fieldman and Sanitarian's Association Conference in Jefferson City, MO

Rachel Hardy attended the FERN: Food Microbiology and Rapid Methods Course in St. Paul, MN

Daniele Rawlings attended the FERN: Salmonella in foods in St. Paul, MN

Josh Featherston, **Keith Bock**, **Dennis Schmitz** and **Matt Sinn** attended the SCID Training Workshop at CDC in Atlanta

Jesse Meller attended the LRN Rapid Methods Training Course at the Iowa State Hygienic Lab in Coaralville, IA

Jessie Bauer attended AMD Day at CDC in Atlanta, GA

Harrison Boyer attend Laboratory Methods for Detecting Rabies Virus in Manhattan, KS

Introducing Laboratory Employee of the Quarters

By: Roy Tu'ua, TB Unit Chief and S.C.O.P.E. Team Leader

Quarter III Sandy Jones

This may seem like déjà vu because it is. Sandy Jones was the recipient for this award three years ago. This time Sandy Jones was selected for her tenure being in two places at the same time. In May 2015, Sandy had taken on the responsibility of supporting the Laboratory in the absence of the Administrative AOSA as well as upholding her duties in the LPES unit.

During that time the laboratory saw an

inordinate amount of personnel actions which needed immediate and timely disposition. Sandy coordinated the numerous personnel actions as well as maintained her everyday duties in the LPES unit. Unit Chiefs have benefited from Sandy's persistence and institutional knowledge about navigating through the complex protocols of the hiring process along with arranging in-state and out-of-state travel for all laboratory personnel, participating in laboratory

projects and a being a member on the Department COOP committee.

Sandy's dedication and determination accompanied with her bright and fantastic attitude allowed her to accomplish all these tasks without complaint or additional compensation.

Once again please join me in congratulating **SANDY JONES** for her outstanding service.



Congratulations Sandy!



Quarter IV Matt Sinn

Matt began in the lab a couple of years ago starting in the Virology Unit and has since transferred into our Molecular Unit. Matt was selected for his unwavering dedication to performing quality work and providing excellent customer service. Matt was selected based on events that transpired while still in the Virology Unit. It is during this time both the Virology and Molecular Units were short-staffed to which Matt volunteered to help out in the Molecular Unit any way he could by fielding both Virology and Molecular phone calls, providing laboratory results, or checking equipment

temperatures to take to pressure off the unit.

In addition to providing assistance to the Molecular Unit, Matt had also been doing an outstanding job within the Virology Unit by taking over all supply purchases while training in virus isolation. Matt had stepped up to the plate and taken on more responsibility in a short period of time while negotiating multiple testing areas each day to maintain the timely reporting of all laboratory results without any issues.

Matt did all this without being asked. In fact, Matt recognized the need and took it upon himself to

broach the matter head on with the support from both Unit Chiefs. Matt sets an excellent example of how to break down silos in the lab and encourage collaboration between units. He is always there to lend a helping hand when a unit is understaffed or overwhelmed while still keeping up with his daily tasks.

Once again, join me in congratulating **MATTHEW SINN** for his dedication and excellent service!!



Congratulations Matt!



Super Power Hero Lab!

The MSPHL Biowatch staff received a big thank you from one of its Partners from the St. Louis County Health Department. Wayne Willhelm suggested that laboratory staff were super heroes and that SPHL actually stood for **Super Power Hero Lab**. Instead of capes we don white lab coats and do our best to protect the lives of all Missourians and beyond with our science powers. Thanks Wayne for coming up with our new acronym!

Around Jefferson City, MO The Marmaduke House



The Marmaduke House, named after the first resident warden Darwin W. Marmaduke who was appointed warden by his brother, John Sappington Marmaduke, Governor of Missouri, sits on the corner of Capital Avenue just two blocks from the Missouri State Public Health Laboratory. The house was designed in a Queen Anne style by Architect M.F. Bell and was built in 1888 entirely with prison inmate labor. While it has been used for numerous purposes in the past, such as offices, it is now home to the Jefferson City Convention and Visitor's Bureau. In conjunction with the Missouri State Penitentiary tours, there is a newly opened museum that provides tourists additional historical information about the famous prison that operated for 168 years. The museum houses MSP memorabilia as well as a replica cell that demonstrates the living conditions at the prison. Visitors can view the many displays that provide information on prison industries, contract labor/private industries, life inside the walls and control/counter-control. <http://www.visitjeffersoncity.com/attractions.php>

Editorial Board for *Beyond The Scope*

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